Ontario

Ministry of Health

Emergency Health Services

Inter-Hospital Patient Transportation

INTER-HOSPITAL PATIENT TRANSPORTATION

Emergency Health Services
Ministry of Health
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APPENDIX: FINAL REPORT ON THE STUDY OF NON-EMERGENCY PATIENT TRANSFERS BETWEEN HEALTH FACILITIES

SUMMARY

Approximately two years ago, the Ministry of Health's Emergency Health Services Group (EHS) began a review of the issues and problems associated with the provision of ambulance services for the transportation of patients between health facilities. The review was precipitated by two developments. The first was that the Ministry was receiving numerous complaints from hospitals, physicians and patients regarding long delays in ambulance transfers. The second was the realization among ambulance managers that there were cheaper and more efficient ways of transferring patients between hospitals than the use of the regular, single-stretcher ambulances.

In December, 1982, the EHS and Institutional Divisions undertook a joint study of inter-hospital transfer problems. The report of the study was submitted to EHS in May 1984.

The study found that inter-hospital transportation absorbs approximately 30% of the workload and cost of the ambulance system. Many transfer problems arise because ambulance vehicles are used for both primary emergency response and non-emergency transfers. The lack of co-ordination of transfer bookings and appointment scheduling within hospitals also adversely affects patient care and transfer cost-efficiency. The study recommended experimentation with dedicated alternative transportation modes, in particular, the use of multi-patient vehicles or units (MPUs), an increase in the number of scheduled transfer routes, and improvements in transfer co-ordination including the provision of space and personnel in large receiving hospitals to facilitate transfers.

In the meantime, steps have been undertaken by EHS to address many inter-hospital transfer problems. Such steps include:

- better scheduling and dispatching made possible by developments in central ambulance dispatching and standardization of dispatch procedures,
- increases in the number of ambulances and crews in high demand areas, such as Ottawa and Windsor,
- the introduction of critical care transport units which are dedicated to provide inter-hospital transportation for critically ill or injured patients,
- the development of provincial guidelines and the promotion of better communication between sending and receiving hospitals in the transfer of the critically ill, and
- the conduct of local transfer studies by EHS service and dispatch managers to examine the feasibility of introducing multi-patient vehicles.

In order to ensure that the interest and initiative undertaken to date will be sustained, EHS further recommends:

1. THAT THE ROLE OF THE AMBULANCE SERVICES BRANCH IN THE PROVISION OF SERVICES FOR THE TRANSPORTATION OF PATIENTS BETWEEN HEALTH FACILITIES BE MAINTAINED;

2. THAT THE MINISTRY RECOGNIZE THE AMBULANCE SYSTEM AS AN IMPORTANT LINK IN THE HEALTH CARE CONTINUUM BY GIVING CAREFUL CONSIDERATION TO THE IMPACT AND COST TO THE AMBULANCE SYSTEM IN ANY FUTURE RATIONALIZATION AND REGIONALIZATION OF SPECIAL HOSPITAL SERVICES;

3. THAT A SET OF PROVINCIAL GUIDELINES ON INTER-HOSPITAL PATIENT TRANSFERS BE DEVELOPED FOR USE BY HOSPITALS, PHYSICIANS, NURSES AND AMBULANCE PERSONNEL AS QUICKLY AS POSSIBLE BY EHS, WITH INPUT FROM THE PROVINCIAL EHS ADVISORY COMMITTEE;

4. THAT APPROVAL BE GIVEN TO EHS TO INTRODUCE ONE YEAR PILOT PROJECTS IN A NUMBER OF SELECTED AREAS TO TEST THE EFFECTIVENESS OF MULTI-PATIENT UNITS AND THEIR IMPACT ON THE AMBULANCE SYSTEM;

5. THAT THE MINISTRY FORMALLY ASK THE SIX AREA EHS COMMITTEES TO UNDERTAKE A REVIEW OF INTER-HOSPITAL PATIENT REFERRAL AND TRANSFER PATTERNS AND PRACTICES WITHIN THEIR BOUNDARIES, AND TO REPORT TO THE MINISTRY ON:
   a) RECOMMENDED APPROACHES TO PROMOTING HOSPITAL CATEGORIZATION SO THAT PATIENTS CAN BE TRANSFERRED EXPEDITIOUSLY TO THE MOST APPROPRIATE FACILITY IN THE REGION;
   b) THE ADEQUACY OF CURRENT INTER-HOSPITAL TRANSPORTATION SERVICES, AND THE NEED FOR AND FEASIBILITY OF INTRODUCING ALTERNATIVE TRANSPORT MODES AND NEW TRANSPORTATION SERVICE ARRANGEMENTS AS COST-EFFICIENCY/IMPROVEMENT MEASURES;

c) THE ADEQUACY OF CURRENT INTER-HOSPITAL TRANSFER ARRANGEMENTS, CO-ORDINATION AND COMMUNICATION BETWEEN HOSPITALS, AND BETWEEN HOSPITALS AND AMBULANCE SERVICES, AND TO SUGGEST CHANGES WHERE NECESSARY.

6. THAT THE MINISTRY FORMALLY ASK THE METRO TORONTO DISTRICT HEALTH COUNCIL TO WORK CLOSELY WITH THE METRO TORONTO DEPARTMENT OF AMBULANCE SERVICES AND HOSPITALS IN METRO TORONTO TO ENCOURAGE:
   a) BETTER UTILIZATION OF EXISTING MPUs,
   b) THE ESTABLISHMENT OF SCHEDULED TRANSFER ROUTES,
   c) BLOCK BOOKING OF PATIENT TRANSFERS BY HOSPITALS, AND
   d) THE PROVISION OF SPACE AND PERSONNEL IN LARGE RECEIVING HOSPITALS TO FACILITATE DOOR TO DOOR AMBULANCE TRANSFERS.

ISSUE

This report reviews issues and problems associated with the provision of ambulance services for the transportation of patients between health facilities, documents steps which have been taken by the Ministry's Emergency Health Services Group (EHS) to improve patient care and cost-efficiency in inter-hospital transfers, and makes recommendations for further improvements.

BACKGROUND

The ambulance system provides services for the transportation of patients between health facilities at the request of the attending physician. These are usually patients who are referred to another health facility for diagnosis, specialized treatment or admission. Generally speaking, these patients require the use of a stretcher or are in need of medical care and attention during transit. Inter-hospital transfers make up about 30% of all the patient carrying calls which the ambulance system responds to in any given year. In 1983, there were approximately 220,400 such transfers. These services are fully funded by the Ministry and are provided free of charge to the hospitals and the patients.

The need to transfer patients to and from facilities for specialized diagnosis and treatment has increased substantially over the past five years.(1) This increase is the result of rapid advances in medical technology, accompanied by the development of highly specialized acute care facilities in a small number of hospitals, usually on a regional basis. The Ministry has encouraged this development which is commonly referred to as the "rationalization and regionalization" of hospital services. By providing rapid ambulance transportation between facilities, it is possible for the health care system to provide the most advanced care to the largest number of patients without costly duplication of expensive resources.

Until now, the ambulance system has been able to make adequate arrangements to accommodate the increased demand for inter-facility transfers. In most instances, these arrangements include:

- the allocation of additional vehicles and crews in certain high demand areas;

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(1) There were 148,000 inter-facility transfers in 1979, 180,300 in 1981 and 220,400 in 1983

- the scheduling of routine, deferrable inter-facility transfers to take place during "down" times when ambulance services are known to be less busy;
- delaying routine, deferrable inter-facility transfers when the ambulance is required to respond to higher priority calls.

The problems caused by these arrangements are immediately obvious, especially when carried out on a large scale. Additional vehicles and crews place a strain on the ambulance budget and often result in significant cost increases. Special scheduling of inter-facility transfers requires good communication and co-operation from both sending and receiving hospitals and ambulance services; it is at times not possible due to fixed hospital clinic hours. Unscheduled delays in transfers cause problems for sending as well as receiving hospitals, and particularly for the patient, who may be left to wait for an ambulance for several hours in the hallway of the hospital. Patients may be left unattended while they wait, and some have been known to miss their meals and medication. When the patient is accompanied by a hospital escort, usually a nursing staff, the long wait means that the escort is also out of his or her home hospital for prolonged periods, at significant cost to the sending hospital.

INTER-HOSPITAL TRANSFER ISSUES

In 1982, the EHS group identified four sets of transfer issues for examination. These issues were:

(A) the nature and extent of ambulance involvement in inter-hospital transfers;
(B) the policies and procedures of hospitals in inter-hospital transfers;
(C) the cost of transfers to the ambulance system and the possibility of reducing that cost; and
(D) the role of the ambulance system in inter-hospital transportation.

The issues in category (A) required an analysis of data concerning the number of transfers, the types of patients being transferred, the locations of transfer pick-ups and destinations, transfer routes and distances, and the availability of ambulances to carry out these transfers.

The issues in category (B) related to transfer arrangements, co-ordination and communication. EHS believed that efficiency in patient transfers could be increased with good co-ordination. It was therefore necessary to find out:

. how transfers were arranged by hospitals;

- whether hospitals in a community had pre-arranged agreements on which hospitals should receive what types of patients;
- whether hospitals had written policies and procedures for transfers governing when and why a patient was transferred, how transfers should be arranged and scheduled, when patient escorts were necessary, who should act as patient escorts, and who had medical responsibility for the patient when he or she was out of the sending/referring hospital;
- whether there was adequate communication between sending/referring hospitals and receiving/consulting hospitals, and between the hospitals and the ambulance services regarding patient condition and requirements, and co-ordination of clinical appointments and transfer schedules.

The issues in category (C) relating to cost and cost reduction were:

- whether ambulances were used extensively to transfer patients who were ambulatory, who did not require medical attention en route, and who therefore could use other, probably less expensive, means of transportation;
- whether the use of the regular, single-stretcher ambulances in transfers could be replaced by less costly transportation modes, e.g. multi-patient vehicles such as buses, vans and multi-stretcher vehicles, and other arrangements such as contracting services to transportation companies, such as the TTC, Wheeltrans and PHIACS (Physically Handicapped Independent Advancement Community Services), etc.

The issues in category (D) required the clarification of the role of the ambulance system, i.e., should the ambulance system continue to provide both emergency and non-emergency transportation services, or should another transportation system be set up to provide for the inter-hospital transportation of non-emergency patients, leaving the ambulance system to concentrate on the provision of emergency health services.

In attempting to address all these questions, EHS felt that the quality of patient care should be an important consideration. For example:

- Is patient care being compromised because the same ambulance system is used for primary emergency as well as inter-hospital transportation?
- Would patients being transferred between hospitals receive higher priority, shorter waiting time and better care if there is a dedicated transfer system?
- Can improvements to patient care be made by improving hospital transfer arrangements and co-ordination?

THE INTER-HOSPITAL PATIENT TRANSFER STUDY

As these issues affect both the ambulance and hospital sectors, the EHS Group and the Institutional Division agreed to carry out a joint study to examine inter-hospital patient transfer issues and to find solutions to problems.

The Inter-Hospital Patient Transfer Study was conducted by internal Ministry staff during the period from December 1982 to May 1984. The study was carried out in two phases. Phase I was an analysis of patient transfer patterns based on Ontario Ambulance Service Information System (OASIS) data for 1979 to 1981. Phase 2 was a detailed field investigation of patient transfer issues in six district health council areas: Manitoulin-Sudbury, and the five areas with health sciences centres of Thames Valley, Hamilton-Wentworth, Metropolitan Toronto, Ottawa-Carleton and Kingston, Frontenac and Lennox, and Addington.

The study team was assisted by an Advisory Committee made up of respresentatives from the Ontario Hospital Association, Ontario Medical Association, Registered Nurses Association of Ontario, Ontario Nursing Homes Association, Ontario Ambulance Operators Association, Association of Casualty Care Personnel, District Health Councils, the Health Insurance, Emergency Health Services and Institutional Divisions, and the District Health Council Program of the Ministry.

HIGHLIGHTS OF STUDY FINDINGS

The study dealt with most of the issues identified by EHS but focused on short-distance land transfers of patients considered to be "routine", i.e., the non-emergency transfers of stabilized patients for treatment, diagnosis, consultation or admission, usually designated by Ambulance Codes 1 and 2. The reason for this focus is that routine non-emergency patient transfers between institutions make up 82% of all inter-hospital ambulance transfers in Ontario. Furthermore, between 65% and 70% of these routine, non-emergency transfers are made over short distances. The study team concluded that improvements in the transfer of routine patients between institutions in the most densely populated communities are likely to produce the highest cost-efficiency gain.

The full report of the study, entitled "The Study of Non-Emergency Patient Transfers between Health Facilities" is appended to this paper. Highlights of the study are summarized in the following sections.

Patterns of Transfers

Over 180,000 inter-hospital ambulance transfers were made in 1981. These transfers represent approximately 30% of the total number of patient carrying trips made by ambulances during that year. Of these inter-hospital transfers, 82% were routine or non-emergency transfers, the remainder were emergency (Codes 3 and 4) transfers. Half of the routine transfers occurred in the six district health council areas selected for detailed investigation by the study team, i.e. Thames Valley, Hamilton-Wentworth, Metropolitan Toronto, Manitoulin-Sudbury, Ottawa-Carleton, and Kingston region. Most of these routine transfers were short distance transfers with origins and destinations within the same DHC area.

From 1979 to 1981, the number of patient transfers between hospitals increased from 148,024 to 180,296, an increase of 21.8%. The study did not find any pronounced abuse of ambulance services as most (91.3%) of the patients transferred required stretcher transport or medical attention during transit.

The large percentage of non-emergency transfers and the increases in scheduled transfers reflect the trend toward regionalization of specialized facilities for treatment and diagnosis.

In general, non-teaching and community hospitals send patients to teaching hospitals for diagnosis, treatment and admission, and to nursing homes and other facilities for admission. Teaching hospitals send or return patients to these facilities. Ambulances pick up approximately 70% of their patients at acute care hospitals for transport to destinations at other acute care hospitals (65%). In the health sciences centres, from 35% to 75% of the non-emergency transfers are to and from teaching hospitals and account for most of the scheduled transfers.

Arrangements for Patient Transfers

When a patient's physician indicates that a transfer is required, hospital staff are responsible for arranging for transport. It is current practice that an ambulance is called and the attendants arrive at the bedside to transport the patient. Arrangements are made to provide escorts for some patients during transfer. Simple arrangements for transfer become complicated for hospitals, patients and ambulance operators because:

- hospital requests for patient transport are usually made on an ad hoc basis;
- there are frequent requests for short distance transfers;
- much time (often up to 30 minutes) is spent by the ambulance crew picking up and delivering patients within institutions;

- most transfers are requested during hours of heavy traffic and maximum hospital and transport activity e.g., during outpatient clinic and admitting hours;
- patients require return transfers;
- hospital policies and/or physicians, or the patient's condition may require that the patient be accompanied;
- there is inadequate communication between physicians of sending and receiving hospitals and with ambulance services regarding patient condition and patient care requirements.

Patient Escorts

Nineteen percent of all inter-hospital transfer patients are accompanied, i.e., by a doctor, a policeman, fireman, citizen, friend, family member, or more frequently, by a hospital nursing staff. Approximately 15% of the non-emergency transfers are accompanied, 79% of them by RNs, RNAs or ward aides.

Many of the complaints received by the Ministry from hospitals concern patient escorts. These complaints usually relate to:

- the long period during which a hospital staff escorting a patient on a transfer is away from the hospital;
- the drain on hospital manpower and financial resources;
- the lack of return transportation for the escort which may occur when the ambulance is dispatched to respond to an emergency call;
- on occasion, the need to pay for return transportation of escorts;
- inadequate compensation for physicians who accompany patients on transfers.

Costs to Ambulance Services and Hospitals

The most conservative estimate of the average cost of an ambulance trip is $140. At this rate, ambulance transfers of patients between health facilities cost $25,242,000 in 1981, of which $20,700,000 were for non-emergency transfers.

Apart from ambulance costs, hospitals in Ontario spend an estimated one million dollars each year to provide escorts for patients being transferred by ambulance, and another million dollars in taxi fares to transport street-able patients to and from health facilities.

Although most patients transferred between health facilities require stretcher transport, 12,923 or 8.7% were considered to be ambulatory. In 1981, the estimated cost of transporting ambulatory patients who may have been able to be transported by other means was $1,809,220. Half of this amount was spent in the six study areas which have the largest percentages of frequent, short distance patient transfers.

The study found that hospitals sending patients to teaching hospitals absorb costs of patient escorts ranging from $3,000 a year to the annual cost of a full time RN. Hospitals in the health sciences centre areas may send more patients by taxi than ambulance. These patients are street-able, and are assessed by hospital staff as not requiring an ambulance. Hospitals do send escorts with many of these patients, however, and it was not possible for the study team to determine how much money is spent for taxis and taxi escorts compared to the amount spent for escorts for ambulance patients.

Study Recommendations

The study recommended the implementation of demonstration projects in three areas:

1. increases in the number of scheduled transfers;
2. the use of multi-patient units and
3. hospital improvements in the organization and co-ordination of patient transfers, including the designation of a co-ordinator for scheduling and booking transfers, and the establishment of holding areas in the large hospitals for patients awaiting transportation.

The demonstration projects would be evaluated for their impact on transfer efficiency and cost-effectiveness. The results of the evaluation would be used as the basis for province-wide changes. The total direct cost of the demonstration projects was estimated to be about $462,700, including direct additional costs to the hospitals and ambulance services affected.

ROLE OF EHS IN INTER-HOSPITAL TRANSPORTATION

The findings and conclusions of the study confirmed many of the concerns and suggestions of the EHS Group. Before considering the pros and cons of the study recommendations, however, EHS felt that the future role of Ambulance Services Branch be clarified with respect to inter-hospital transportation.

The primary responsibility of the ambulance service has always been recognized to be the provision of emergency response and rapid transportation to those who suffer from sudden illness and injury. However, inter-facility transfers, 82% of which are of a non-emergency nature, have also become part of this responsibility. It could be argued that patients who require transportation from one health facility to another are the responsibility of the sending facility which has admitted the patients for care. EHS explored the option of divesting the ambulance system of the responsibility for the transportation of patients between facilities and placing this responsibility with the hospitals. Hospitals would then have to provide transporation to take patients to and from other health facilities when a transfer becomes necessary.

There are many advantages to this option. The first advantage is the continuity in patient care and patient responsibility which the sending hospital could maintain during both the sending and return trips. The second advantage is the improved scheduling that a hospital could make for transporting patients, since inter-facility transfers of a non-emergency nature would no longer have to compete with emergency transfers for available ambulances. Patients using a hospital's own transporation system would no longer experience delays and long waits because their request for an ambulance transfer was superceded by a higher priority call. The third advantage is that the cost of operating the emergency ambulance system would be considerably lower since its workload would be reduced by approximately 30%. On the other hand, increased funding to hospitals would be required to support their transportation systems.

The biggest disadvantage of having hospitals provide transportation for their own patients is the creation of a second transportation system within the health care field. The economies which the present ambulance system is able to realize by utilizing available vehicles and crews for scheduled and deferrable inter-facility transfers during periods of lower demand will no longer be possible. The cost of supporting two separate transportation systems would in all probability be higher than the cost of the present single ambulance system providing both primary response and inter-facility transportation. In addition, discussions with some hospitals and the Ontario Hospital Association (OHA) have indicated that hospitals would be reluctant to assume the responsibility.

It was therefore concluded that EHS should maintain responsibility for transfers of those patients who require medical attention or the use of a stretcher during transfer.

In order to carry out this responsibility adequately, the ambulance system must be given greater recognition as an important part of the health care continuum. This recognition means that:

- the Ministry must consider the impact and cost to the ambulance system in any future hospital rationalization; and
- hospitals must recognize the necessity for greater collaboration with ambulance services in co-ordinating patient transfers.

EHS PLANS AND ACTION TAKEN TO DATE

Acting on the assumption that the role of the ambulance service in inter-hospital transfers would be maintained, EHS began to address the cost-efficiency and patient care issues which have been validated by the Inter-Hospital Patient Transfer Study. Changes which are being actively pursued or considered by EHS include improvements to transfer co-ordination, the introduction of alternative transportation modes and the consideration of alternative transportation service arrangements.

Transfer Co-ordination Improvements

Extensive field interviews carried out during the study revealed that many of the transfer problems are caused by poor co-ordination of transfer bookings and appointment scheduling within health facilities, poor communication between hospitals and ambulance services. Two improvements in EHS operations are aimed at improving ambulance scheduling and dispatching. The first is the implementation of the province-wide Central Ambulance Dispatch System (CADS) which will provide the tools for ambulance services to co-ordinate and deploy resources more effectively over larger areas. The second is the revision and standardization of dispatch procedures, which will result in improved communication and co-ordination between hospitals and ambulance services. Another development which would facilitate the movement of patients between hospitals is the implementation of Central Hospital Resource Registries across the province. This development is not directly under EHS sponsorship.

Very often, as the study has indicated, delays and inefficiency are caused by ad hoc transfer arrangements which are made by the hospitals and which are not well communicated or understood by other hospitals and the ambulance services. EHS plans to work with hospitals, physicians, nurses, ambulance personnel and the district health councils in developing a set of provincial guidelines on inter-hospital transfers. The guidelines developed by the Ontario Medical Association in 1980 would be used as a basis and input will be requested from the Provincial EHS Advisory Committee.

The provincial guidelines will serve as a generic information and education package which can be adapted for local use to meet local conditions and requirements.

The need for the development and promotion of transfer guidelines has been widely discussed by hospitals, physicians, district health councils and area EHS committees. Through the joint efforts of EHS and a special task force of physicians from tertiary care centres, a Guide on Critical Care Transportation in Ontario was developed for use by sending and receiving hospitals.

Alternative Transfer Modes

An important initiative taken by EHS over the past 18 months has been the introduction of critical care transport units (CCTU). These vehicles contain highly sophisticated equipment and are used to transport critically ill and injured patients from community hospitals to tertiary care centres. When a request for a unit is received by critical care staff at a tertiary care centre, the individual needs of the patient to be transferred are assessed and an appropriate team of physicians, nurses or technicians is dispatched to pick up the patient. The team also stabilizes the patient before transfer and monitors the patient's conditions en route using the vehicle's specialized equipment. The first CCTU was assigned to London to serve Southwestern Ontario in November 1982. The second unit was placed in Kingston in June 1984. Two additional units, operating out of Hamilton and Ottawa were deployed in the fall of the same year.

An important by-product of the introduction of the CCTU has been the stimulation of dialogue between sending and receiving physicians. The interest created by this dialogue will be extremely useful in the development and implementation of the provincial guidelines on inter-hospital transfers.

A second alternative transfer mode being considered by EHS is the multi-patient unit (MPU) for the transfer of stabilized, non-emergency patients between hospitals. MPUs have been tried in Metro-Toronto but only with limited success. The limitation was primarily due to the lack of hospital involvement and support. MPUs could be used successfully given appropriate hospital involvement and support. These vehicles operate best when they carry no more than four to six patients and operate along scheduled routes linking several hospitals where there are frequent daily patient pick-ups and deliveries.

According to the findings of the Inter-Hospital Patient Transfer Study and information provided by EHS managers, there are seven areas in addition to Toronto which could benefit from MPUs. These areas are Sudbury, Ottawa, Kingston, Hamilton, London, Owen Sound and Windsor. There are, of course, many questions regarding MPUs which have to be investigated. Such questions include: the readiness of hospitals in using a new transfer mode, the number and type of attendants required in escorting four to five patients at the same time, vehicle configuration and specifications which would be appropriate for the purpose, accurate cost estimates of operating an MPU and the impact of an MPU on reducing the use and cost of regular ambulances.

It is therefore proposed that MPUs be tested on a pilot basis for one year in up to three geographic areas. The final selection of the pilot test areas will be based on factors such as patient volume, ambulance service and hospital co-operation, dispatch co-ordination capability and potential for cost savings. The annual cost of implementing an MPU in one area has been estimated to be roughly $136,350 (see appended study, page 17). The total estimated cost for three pilot projects, estimated at $410,000 for 1985/86, could likely be absorbed by EHS within its existing budget. As these MPU transfers will be replacing and, in theory, reducing the cost of current ambulance transfers, it should be possible for EHS to make up for the cost of the pilot projects, as well as to show savings, at the end of the one year pilot. The savings could then be applied toward the expansion of the MPU project to other communities in the following year.

Alternative Transportation Service Arrangements

The Ministry has received a number of unsolicited proposals over the last two years from private citizens to operate transportation services for the routine transfer of stabilized patients between hospitals on a contract basis. According to the claims made in these proposals, the cost of such contract services would be much lower than the cost of transfers provided by the regular ambulance service. The arguments against the introduction of yet another transportation arrangement are similar to those described on page 8 relating to hospitals carrying out their own transfers. In addition, there may be difficulties in ensuring effective control of and assuring quality patient care provided by contract operators. Given the right conditions, however, these innovative arrangements may develop into cost-efficient alternatives to the current practice of ambulance transfers. The suggestion should therefore be considered when local EHS committees examine their transfer patterns and issues.

A much more certain way of reducing the amount of time and therefore cost in transferring patients between hospitals is to terminate the current practice of having ambulance attendants picking up and delivering patients from hospital room to hospital room. Instead, the attendants would transfer patients from hospital door to hospital door only, leaving the hospital to look after its patients once they are inside the hospital. The implementation of this measure would require the hospital to provide for patient portering as well as holding facilities where ambulances can pick up and deliver patients quickly. Implementation could be accomplished by issuing a Ministry policy statement to all ambulance services and hospitals regarding the change in ambulance transfer practice, or by negotiating with individual hospitals or groups of hospitals, using DHC's and area EHS committees as forums to reach agreement on how this change can be implemented. Hospitals can be expected to ask the Ministry for funding for additional staff and alterations to physical plant to support this change. EHS proposes to implement this change in a staged and flexible way, as many of the smaller hospitals would not have the staff or the space to accommodate waiting patients, nor would the change have significant impact on ambulance time in small communities with low volume transfers.

CONCLUSIONS AND RECOMMENDATIONS

The first issue which EHS sought to resolve is the clarification of the role of the ambulance system in the provision of services for the transportation of patients between hospitals. Three options were examined: 1) Ambulance Services Branch to maintain its current responsibility; 2) to divest the transportation responsibility to the hospitals; and 3) to set up a separate transportation system under a new agency to take over the responsibility.

The pros and cons of option (2) were examined on page 8. Option (3) was discarded at an early stage when it was found that it had all the disadvantages of option (2) and none of its advantages.

EHS therefore recommends:

1. THAT THE ROLE OF THE AMBULANCE SERVICES BRANCH IN THE PROVISION OF SERVICES FOR THE TRANSPORTATION OF PATIENTS BETWEEN HEALTH FACILITIES BE MAINTAINED;

2. THAT THE MINISTRY RECOGNIZE THE AMBULANCE SYSTEM AS AN IMPORTANT LINK IN THE HEALTH CARE CONTINUUM BY GIVING CAREFUL CONSIDERATION TO THE IMPACT AND COST TO THE AMBULANCE SYSTEM IN ANY FUTURE RATIONALIZATION AND REGIONALIZATION OF SPECIAL HOSPITAL SERVICES.

EHS believes that improvements in inter-hospital transfers begin with better transfer arrangements, co-ordination and communication. In addition to the CADS implementation and dispatch procedures development already underway, EHS recommends:

3. THAT A SET OF PROVINCIAL GUIDELINES ON INTER-HOSPITAL PATIENT TRANSFERS BE DEVELOPED FOR USE BY HOSPITALS, PHYSICIANS, NURSES AND AMBULANCE PERSONNEL AS QUICKLY AS POSSIBLE BY EHS, WITH INPUT FROM THE PROVINCIAL EHS ADVISORY COMMITTEE.

In order to decrease the pressure the large volume of inter-hospital transfers places on the emergency response capability of the ambulance system, and to increase the availability of transportation services for inter-hospital transfers, EHS feels that flexibility in experimenting with alternative transportation modes and new transportation service arrangements should be encouraged. The use of CCTUs for the transfer of critically ill patients is already being introduced in London, Kingston, Hamilton and Ottawa. The use of MPUs, according to both the Inter-Hospital Patient Transfer Study and studies done by local ambulance managers, could be particularly useful when operating along scheduled routes linking several hospitals where there are frequent daily patient pick-ups and deliveries. EHS therefore recommends:

4. THAT APPROVAL BE GIVEN TO EHS TO INTRODUCE ONE YEAR PILOT PROJECTS IN A NUMBER OF SELECTED AREAS TO TEST THE EFFECTIVENESS OF MPUs AND THEIR IMPACT ON THE AMBULANCE SYSTEM.

In addition to the provision of ambulance transportation service, there are many other factors which affect inter-hospital transfer effectiveness and cost efficiency. These factors include the physician's referral pattern and practice, the location of special hospital services and facilities, and the willingness of hospitals, physicians and communities to agree on the categorization and designation of hospitals as receiving centres for the provision of specialized services. While the Ministry can develop provincial guidelines, it is up to local health services planners, providers and consumers to determine how these guidelines can be implemented or adapted to meet local conditions, resources and needs. As most of the inter-hospital transfer issues are area-wide concerns which transcend local or district health council boundaries, the most appropriate forum for their discussion is the Area EHS Committee, which has been set up recently in each of the six health planning areas.

EHS recommends:

5. THAT THE MINISTRY FORMALLY ASK THE SIX AREA EHS COMMITTEES TO UNDERTAKE A REVIEW OF INTER-HOSPITAL PATIENT REFERRAL AND TRANSFER PATTERNS AND PRACTICES WITHIN THEIR BOUNDARIES, AND TO REPORT TO THE MINISTRY ON:

   a) RECOMMENDED APPROACHES TO PROMOTING HOSPITAL CATEGORIZATION SO THAT PATIENTS CAN BE TRANSFERRED EXPEDITIOUSLY TO THE MOST APPROPRIATE FACILITY IN THE REGION;

   b) THE ADEQUACY OF CURRENT INTER-HOSPITAL TRANSPORTATION SERVICES, AND THE NEED FOR AND FEASIBILITY OF INTRODUCING ALTERNATIVE TRANSPORT MODES AND NEW TRANSPORTATION SERVICE ARRANGEMENTS AS COST EFFICIENCY/IMPROVEMENT MEASURES;

   c) THE ADEQUACY OF CURRENT INTER-HOSPITAL TRANSFER ARRANGEMENTS, CO-ORDINATION AND COMMUNICATION BETWEEN HOSPITALS, BETWEEN HOSPITALS AND AMBULANCE SERVICES, AND TO SUGGEST CHANGES WHERE NECESSARY.

Inter-hospital transfers within Metropolitan Toronto make up more than one-quarter of the total inter-hospital transfers in the Province. The Metro Toronto Department of Ambulance Service (DAS) already has MPUs in their ambulance fleet. In addition to having the Central East Area EHS Committee review issues relating to transfers in and out of Metro Toronto in the central east region, EHS recommends:

6. THAT THE MINISTRY FORMALLY ASK THE METRO TORONTO DHC TO WORK CLOSELY WITH DAS AND HOSPITALS IN METRO TORONTO TO ENCOURAGE:

   a) BETTER UTILIZATION OF EXISTING MPUs;

   b) THE ESTABLISHMENT OF SCHEDULED TRANSFER ROUTES;

   c) BLOCK BOOKING OF PATIENT TRANSFERS BY HOSPITALS, AND

   d) THE PROVISION OF SPACE AND PERSONNEL IN LARGE RECEIVING HOSPITALS TO FACILITATE DOOR TO DOOR AMBULANCE TRANSFERS.

APPENDIX

FINAL REPORT

ON THE

STUDY OF NON-EMERGENCY PATIENT TRANSFERS

BETWEEN HEALTH FACILITIES

May, 1984

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The hope is that this study will assist those who are responsible for planning and providing improvements in patient transport and institutional care.

Anna-Rose Spina, Ph.D.

OVERVIEW

Patient Transfer Issues and The Study

Patient Transfer Issues

Historically, emergency transport services and institutional patient services have had separate functions and unique problems. The findings of this study indicate that patient transport and institutional patient care can no longer be considered separately. The designation of hospitals as regional centres for diagnosis and treatment has increased the need to transport patients to and from health facilities on a regular basis and serves as an acknowledgement that transport is part of the health care system. Increases in routine patient transport have increased the necessity for collaboration between those who provide patient transport and those who provide institutional patient care.

Increasingly, the regionalization of diagnostic and treatment services has made patient access to medical care contingent upon transportation to and from hospitals and other health facilities. The result has been an increase in non-emergency or routine ambulance calls which require the dispatch of the same vehicles used for emergency calls.

Because all calls are priorized according to the needs of the patients requiring transport, routine calls are delayed until vehicles are available. Non-emergency patients experience long, tiring waits for transport. Hospitals sending patients

to diagnostic and treatment centres often send escorts with them to provide care, meals and to administer medication. Hospitals receiving patients do not have dedicated space and personnel to provide care for those awaiting treatment, those undergoing treatment and those waiting for transport.

The cost of transporting patients individually by ambulance is estimated to be an average of $140 per trip. Hospitals sending patients by ambulance may spend from $200 to $2,000 a month to provide patient escorts or an estimated average of $58 per trip. Using these estimates, in 1981, the 148,371 non-emergency transfers between health facilities by ambulance cost $20,771,940. Sending hospitals provided 17,290 patient escorts for the non-emergency trips at a cost of approximately $1,000,000.

The Patient Transfer Study

This study was undertaken at the request of the Emergency Health and Institutional Divisions of the Ministry of Health 1) to examine the patterns of non-emergency transfers of patients between hospitals and other health facilities in Ontario, and 2) to determine the feasibility of introducing alternatives to current transport modes.

Of primary interest in this investigation were the issues concerning routine short-distance land transfers of patients, i.e., the deferrable or unscheduled and scheduled transfers for treatment, diagnosis, consultation or admission, usually designated by Ambulance Codes 1 and 2[1]. These transfers account for 82 percent of all patient transfers between

[1]Ambulance Codes are defined and described in Appendix A.

health facilities or 25 percent of all requests for ambulances in the Province.

Six areas of the Province have received special attention in the study. They are areas with large numbers of routine transfers in which viable alternatives to single-patient ambulance transport are most likely to be developed.

The study was carried out in two phases:

I. An analysis of patient transfer patterns using Ontario Ambulance Service Information System (OASIS) data for 1979 through 1981.

II. A detailed field investigation of patient transfer issues in six district health council areas: Manitoulin-Sudbury and the five areas with health sciences centres, Thames Valley, Hamilton-Wentworth, Metropolitan Toronto, Ottawa-Carleton, and Kingston, Frontenac and Lennox, and Addington.

In March 1983, a Patient Transfer Study Advisory Committee was formed to review the findings of the study, to make suggestions regarding the recommendations and to discuss how the recommendations might best be implemented. Members of the Committee represent the Ontario Hospital Association, Ontario Medical Association, Registered Nurses Association of Ontario, Ontario Nursing Homes Association,

Ontario Ambulance Operators Association, Ambulance Services, Association of Casualty Care Personnel, District Health Councils, and the Hospital Insurance, Emergency Health Services and Institutional Divisions, and the District Health Council Program within the Ministry.*

* Appendix A contains additional information on study procedures, including the Terms of Reference, a Summary of the Proposal for the study, a list of members of the Advisory Committee and a tabulation of personal interviews in the six study areas, Table 1.

THE FINDINGS

Increases in Transfers

From 1979 to 1981, the number of patient transfers between health facilities[2] in the Province increased by 21.8 percent, although the percentage of transfers each region contributed to the Provincial total remained stable[3]. Three-quarters of the increase took place from 1979 to 1980. Table 3, Appendix B, shows that increases by Region and Study Area followed the Provincial pattern with three exceptions: the North West Region, the South West Region, including the Thames Valley District Health Council area, and Manitoulin-Sudbury. In these areas, the 1980 to 1981 increase exceeded the increase from 1979 to 1980.

For the three years of the study, the average increases in emergency and non-emergency transfers of patients between institutions were equal to the Provincial increase. However, the percentage increase in scheduled (Code 2) transfers exceeded increases in the other transfer codes by 2.4 percent. Patients from District Health Council areas that do not include health sciences centres have to travel longer distances for diagnostic and treatment services and are more likely to have scheduled appointments. In these areas, the percentage of scheduled trips tends to exceed the Provincial average of 19 percent[4].

---

[2] Also referred to as inter-institutional transfers.

[3] An increase from 148,024 to 180,296, Table 2, Appendix B.

[4] The exceptions are Kent (3%), Durham (7%), and York (4%) although the latter two could be considered to be in the Metro Toronto health sciences centre area.

Scheduled trips represent only about one-fourth of the non-emergency transfers in the Province; an average of 63 percent are unscheduled. The four health sciences centre areas that exceed the Provincial average for unscheduled transfers[5] account for 49 percent of all the unscheduled inter-institutional transfers.

Effects of Regionalization

The large percentage of non-emergency transfers and the increases in scheduled transfers reflect the trend toward regionalization of specialized facilities for treatment and diagnosis. Other indications are the types of health facilities that serve as the most frequent pick-up locations and destinations and the number of regular, short distance trips.

For the analysis of transfer patterns, OASIS data for 1981 was grouped by type of facility, i.e., teaching hospitals, acute care hospitals of 200+ beds and 1-199 beds, nursing homes, and others, including chronic hospitals, psychiatric and other specialized and rehabilitation facilities. In general, non-teaching and community hospitals send patients to teaching hospitals for diagnosis and treatment and admission and to nursing homes and other facilities for admission. Teaching hospitals send or return patients to these facilities. Ambulances pick up approximately 70 percent of their patients at acute care hospitals for transport to destinations at other acute care hospitals (65 percent). In the health

---

[5] Thames Valley, Hamilton-Wentworth, Metro Toronto and Ottawa-Carleton, Table 4, Appendix B.

sciences centres, from 35 to 75 percent of the non-emergency transfers are to and from teaching hospitals and account for most of the scheduled transfers. In Manitoulin-Sudbury from 86 to 91 percent of the non-emergency transfers are between the three 200+ bed acute care hospitals.

Approximately 44 percent of the patients transported between health facilities as non-emergency transfers require a return trip. This percentage increases with the frequency of transfers between specific facilities. For example, for each of the study areas, with the exception of Toronto, from 54 percent (Thames Valley) to 80 percent of the frequent transfers (Hamilton-Wentworth, Kingston and Ottawa-Carleton) require return trips. In Manitoulin-Sudbury 90 to 97 percent of the frequent transfers require return trips. Because of the complexity of the transfer patterns in Toronto, the area is actually several areas and accounts for 26 percent of all transfers between health facilities in Ontario. In the central area of Toronto, 82 percent of the most frequent transfers between hospitals require return trips[6].

[6]Appendix B contains a description of frequent, short distance transfers for each of the study areas.

Arrangements for Patient Transfers

When a patient's physician indicates that a transfer is required, hospital staff are responsible for arranging for transport. It is current practice that an ambulance is called and the attendants arrive at the bedside to transport the patient. Arrangements are made to provide escorts for some patients during transfer. Simple arrangements for transfer become complicated for hospitals, patients and ambulance operators because:

1) hospital requests for patient transport are usually made on an ad hoc basis;

2) there are frequent requests for short distance transfers;

3) of time spent picking up and delivering patients within institutions;

4) most transfers are requested during hours of heavy traffic and maximum activity;

5) patients require return transfers;

6) hospital policies and/or physicians, or the patients' condition may require that the patient be accompanied.

Non-emergency requests for transfer are usually placed as they are ordered by physicians. Requests are most often placed by staff of the patient's unit. As a result, ambulance dispatchers could receive several unrelated requests for

transfer from units in the same hospital at about the same time. Although 63 percent of these transfers are not scheduled for specific times, the majority are made frequently to and from the same institutions during outpatient clinic and admitting hours. During these peak times, non-urgent transfers are made as vehicles become available.

The time it takes to pickup and deliver patients to and from clinics and bed has been estimated at up to 30 minutes, particularly in the large hospitals. Time spent in this way causes additional transfer delays and increases transport time from patients. Patients requiring return transport (44 percent) depend on someone at the receiving institution to place a return request and may experience several periods of waiting.* The result is that the arrival and return time of the patient is unpredictable, and adhering to plans for patient care, meals and medication becomes problematic.

Hospitals send escorts with patients as much because of the unpredictability of the time of return and sending or receiving hospital policies as the condition of the patient. Escorts provide care for patients and serve as patient advocates.

Most receiving hospitals do not provide care for transfer patients. Patient escorts provide it. Some receiving hospitals require escorts only if patients are disoriented, are unable to communicate,

* Appendix B includes The Well-Being of Patients and Waiting Time, a discussion of the situation in the study areas.

or if the treatment or diagnostic procedure is to be invasive. Hospital in-patients are sometimes given priority over out-patients. Escorts help to ensure that the patient receives the procedures and services requested.

Nineteen percent of all inter-institutional transfer patients are accompanied, i.e., by a doctor at the scene or in the ambulance, by a policeman, fireman, citizen, friend or family or by a nurse; approximately 15 percent of the non-emergency transfers (Code 1 and 2) are accompanied, 79 percent of them by RNs, RNAs or ward aides (Table 5, Appendix B).

Interviews and OASIS data for 1981 reveal four factors that determine whether a patient is accompanied:

1) the condition of the patient before and/or after diagnostic procedure or treatment;

2) policies of the sending and receiving hospitals;

3) transfer distance;

4) whether or not the patient is returning to the sending hospital.

In general, areas that have high percentages of patients requiring return transfers are also areas that have high percentages of escorted patients[7]. Patients travelling longer distances are likely to be admitted to hospital, and are likely to be from areas with low percentages of escorts. However, areas in which the majority of non-emergency patients are transported short distances, i.e., less than 10 kilometers, are more likely to be high escort percentage areas, whether or not they have high percentages of returning patients[8]. High escort percentages in areas with low percentages of returning patients may be accounted for by a combination of hospital policies and practices[9], physician preferences and the condition or anticipated condition of the patient following treatment or diagnosis.

[7]Compare Tables 6 and 7, Appendix B.

[8]Compare Tables 8A and B, Appendix B.

[9]See Appendix B for study findings on the Legal Responsibilities of Hospitals.

Costs to Ambulance Services and Hospitals

The most conservative estimate of the average cost of an ambulance trip is $140 per call. At this rate, non-emergency ambulance transfers of patients between health facilities cost $20,771,940 a year.

Apart from ambulance costs, hospitals in Ontario spend an estimated million dollars each year to provide escorts for patients being transferred by ambulance, and another million dollars in taxi fares to transport street-able patients to and from health facilities[10].

Most patients transferred between health facilities require stretcher transport. Of the 148,371 non-emergency patients transferred in 1981, however, 12,923 or 8.7 percent were considered to be ambulatory; half of them were transferred within the six study areas[11]. In 1981, the estimated cost of transporting ambulatory patients who may have been able to be transported by other means was $1,809,220. Half of this amount was spent in the six study areas which have the largest percentages of frequent, short distance patient transfers.

[10] Available Estimates of Hospital Costs for Routine Patient Transfers, Table 9, Appendix B.

[11] Table 10, Appendix B, Non-Emergency Transfers of Ambulatory Patients between Health Facilities.

Table 9 shows that hospitals sending patients to teaching hospitals absorb the costs of patient escorts ranging from $3,000 a year to the annual cost of a full time RN. Hospitals in the health sciences center areas may send more patients by taxi than ambulance. These patients are street-able, and are not assessed by hospital staff as requiring an ambulance. Hospitals do send escorts with many of these patients, however, and it is almost impossible to determine how much money is spent for taxis and taxi escorts compared to the amount spent for escorts for ambulance patients.

RECOMMENDATIONS

Rationale

The literature on transport issues, correspondence in Ministry files, and internal reviews of the issues[12] have not yielded information that differs from the findings of this study. As well, there is no reason to believe that the inter-institutional patient transfer situation in the six study areas differs from other areas in the Province. The question is: How can the situation be improved for patients, hospitals and ambulance services in the short run and within current cost constraints, and how to accommodate continuing increases in non-emergency patient transfers and future health system development.

Earlier it was noted that between 65 and 70 percent of the non-emergency transfers are made frequently over short distances to and from teaching and other acute care hospitals. These transfers serve patients who are in stable condition; 8.7 percent are ambulatory. Although 44 percent of the patients transferred also require return trips, 63 percent of these trips are unscheduled. Transfer requests are placed on an ad hoc basis. OASIS data indicates that two-thirds of the non-emergency transfers are under 10 kilometers and require less than 30 minutes of travel time. Frequently, another 30 minutes are needed to reach the hospital bedside or the appropriate clinic to obtain or deliver a patient.

[12] The Report of the Working Group on Ambulance Services in the Institutional Division, 1978.

Suggested Improvements

These findings suggest two ways to improve patient transport and transfer arrangements:

1) increase the number of scheduled transfers[13] and improve the coordination of hospital transfer requests with available vehicles;

2) decrease the number of patient transfers by increasing the number of patients transported per trip in areas of the Province with the largest volumes of frequent transfers;

through

Planning:

local area health services planning in District Health Councils.

Implementation:

appointment of an Implementation Group to assist local ambulance services and hospitals in operationalizing plans developed by District Health Council Committees[14].

Proposals

Initiate three types of demonstration projects for one year in order to monitor and assess methods, results, implications and costs of changes in current transport and hospital arrangements and to develop Provincial guidelines.

[13]Table 11 in Appendix C describes the potential for improvement via scheduling.

[14]Details of the Recommendations are in Appendix C.

Proposal I

Select one or two areas to introduce a demonstration of the effect of increases in scheduled transfers and coordination of vehicles, transfer appointments and return transfers.

Proposal II

Select an area with large numbers of short distance transfers for the introduction of a vehicle capable of transferring several patients at a time, i.e., a multi-patient vehicle or unit, over an established route.

Proposal III

Select an area to introduce a multi-patient vehicle, increases in scheduled transfers, and coordination of hospital arrangements, including the establishment of patient transport areas, and a coordinator position for scheduling and booking transfers[15].

[15] The Manitoulin-Sudbury District Health Council, the Ambulance Operators and Administrators and staff of the three hospitals have undertaken to plan for changing transport and hospital arrangements for non-emergency transfers. They may be interested in initiating Proposal III. The costing of Proposal III reflects the situation in that area, although the unit costs would apply to any area in the Province. A discussion of changes in transfer arrangements in the study areas is in Appendix C.

COSTS

Total Cost of Proposals I,II,III (One Year)		$462,700
Planning and Implementation	$70,000	
Proposal I	No Direct Cost	
Proposal II	$136,350	
Proposal III	$256,350	

Details of Costing

Planning		No Direct Cost
Implementation		$ 70,000
Salary for Implementation Coordinator for one year (Secondment or Contract)	$ 50,000	
Travel	10,000	
Clerical Support	10,000	
	$ 70,000.	

Proposal I	No Direct Cost.
Proposal II	$136,350
Vehicle and Attendant Cost of leasing and operating one multi-patient vehicle with four stretchers for one year	$112,350

Proposal II (cont'd)		
Salary of one additional attendant to staff[16] the multi-patiert vehicle	$ 24,000.	
Proposal III		$256,350
Vehicle and Attendant Cost of leasing and operating a multi-patient vehicle for one year	$136,350 $112,350	
Salary of one attendant	$ 24,000	
Hospital arrangements Salary (one year) of up to three (.5 F.T.E.) scheduling and booking coordinators @ $10,000	$120,000 $ 30,000	
Salary for one year for 1 F.T.E. RN (@ $30,000) to supervise each of three patient transfer (holding) areas	$ 90,000.	

[16] In addition, two attendants from a currently operating ambulance would staff the multi-patient vehicle. According to this plan, the ambulance would remain on stand-by.

APPENDIX A

Additional Information on the Study Procedures

On September 27, 1982, the Operations Committee of the Ministry accepted the proposal for the Inter-Institutional Transfer Study put forward by the Emergency Health Services Division. Phase I officially began in January, 1983. Phase II began in June, 1983, and continued through August. During this time personal interviews were held with 154 Regional Managers of Emergency Services, ambulance services managers, hospital administrators, physicians and nurses responsible for in-patient care, clinic services, emergency services and transport services, as well as executives and members of district health councils in the six areas.

In March, 1983, the Inter-Institutional Patient Transfer Study Advisory Committee was formed. Meetings of the Committee were held on June 2, 1983, to discuss the findings of Phase I of the study; on October 13, the Committee met to discuss the results of Phase II. On February 23, 1984 the Advisory Committee reviewed and discussed the draft of the final report of the study and the recommendations.

TERMS OF REFERENCE

PROBLEM

Inter-hospital patient transfers

BACKGROUND

- From Ambulance Services perspective
- From hospital perspective

ISSUES

- Cost
- Patient accompaniment
- Legal responsibility
- Referral patterns
- Patient inconvenience
- Patient records

SCOPE

* Ambulance services (incl. dispatch): more cost-efficient alternatives, e.g.:
  - limiting ambulance responsibility to transferring patients from hospital door to hospital door only,
  - use of multi-patient vehicles,
  - use of hospital personnel and hospital operated vehicles for transfers,
  - develop a patient transfer service as a separate component of the ambulance system.
* Hospitals: present practices and impact of alternatives on accompaniment, legal responsibility, referral patterns, transfer guidelines/policies.

APPROACH

1. A detailed assessment of the situation relating to both long and short distance transfers as they affect the ambulance and hospital systems,
2. A comprehensive review of alternatives, their feasibility, cost-saving potential and expected impact,
3. The implementation of a demonstration project in a selected community (or communities),
4. An evaluation of the impact of the demonstration project, and
5. Recommendations for province-wide application of alternatives/improvements to current inter-hospital patient transfer practices.

SUMMARY

PATIENT TRANSFER STUDY

1982/83

PROPOSAL

Introduction

The purpose of this study is to clarify the issues associated with the transfer of patients within and between hospitals and other health facilities in the province, to study routine inter-facility transfers, and to determine the feasibility of introducing alternative approaches to current routine patient transfer modes on a demonstration project or pilot basis. On September 27, 1982 the Operations Committee of the Ministry of Health accepted the proposal of the Emergency Health Services and Institutional Divisions to undertake the study in two phases:

Phase I an investigation of patient transfer patterns between hospitals and other health facilities across the province, January through May,1983;

Phase II an investigation of transfer patterns in detail in selected areas, June 1983.

Patient Transfers

The increasing role of technology in medical diagnosis and treatment and the regionalization of diagnostic and treatment services make frequent routine transfers* of patients necessary between hospitals and other health facilities.

At present, patients not transported by family car or taxi are transferred in indvidual ambulances. In 1981, 31 percent of all ambulance calls were requests for transfers between health facilities, e.g., hospitals, nursing homes, or the transport of patients on home care. Of these, 82 percent were requests for the routine transfer of patients; approximately 10 percent were accompanied by a nurse, or other attendant from the sending facility.

The Issues

The inter-facility patient transfer issues that have been identified include:

1) policies of hospitals and other health facilities on patient transfers and the resulting legal responsibilities;

*Routine transfers are transfers of patients who are clinically stable, patients who are receiving intravenous fluids, or patients with an acute illness requiring prompt or immediate attention.

2) the decision-making process in hospitals, nursing homes, home care programs that initiates transfers;

3) inconvenience for patients with respect to the transfer(s) and the waiting time at the sending and receiving facilities;

4) the flow of patient information from sending to receiving facility;

5) the choice of staff to accompany patients being transferred;

6) the cost of transfers to facilities and to ambulance service providers;

7) the use of ambulance vehicles to transfer patients.

The Study

It seems clear that a study of routine patient transfers should involve the Emergency Health Services and Institutional Divisions, as well as other interested groups within the Ministry of Health, e.g., the District Health Council Program, and outside the Ministry, e.g., the Ontario Medical Association, and the Ontario Hospital Association. An Advisory Committee with members from intra-Ministerial and extra-Ministerial groups will provide input to the study, and promote co-operation and communication with their respective groups.

In the first phase, data on patient transfers for 1981 will be arrayed and analyzed on a province-wide basis by District Health Council areas. The data is available through the Ontario Ambulance Service Information System (OASIS). The advisory group will provide insights, experience and information to aid in understanding the data, and the patient transfer issues.

In the second phase, the study will focus on a detailed analysis of patient transfer issues in specific areas of the province. Following Phase II, the Emergency Health Services Division will review several alternative transfer modes, including the Multiple Patient Vehicle, and implement a demonstration project in one area of the province, i.e., District Health Council area.

AMBULANCE CODES
DEFINITION OF CALL REQUEST PRIORITIES

Priority 1 - Deferrable Call

A non-urgent call which may be temporarily delayed without being physically detrimental to the patient.

Examples:

(a) transfers to hospitals of patients who are not acutely ill,

(b) transfers of patients from hospital,

(c) transfers of patients to and from nursing homes, diagnostic and treatment facilities for out-patient services. This includes the majority of convalescent, chronic and out-patient calls,

(d) most 'booked calls'.

Priority 2 - Scheduled Call

Any call which must be done at a specific time due to the limited availability of special treatment or diagnostic facilities or other scheduled transportation facilities. Such scheduling is not done because of a patient's preference or convenience.

Examples:

(a) transport to special cancer clinics such as cobalt therapy, diagnostic x-ray, EEG,

(b) transport to meet scheduled air or land transport such as a plane or a train,

(c) relay trip or change in crew.

Priority 3 - Prompt Call

Any call which may be answered with moderate delay. All patients classified in this priority group are stable or are under professional care and not in immediate danger of death. Such patients may be suffering from a serious illness or may be injured, but they are in a stable condition.

Examples:

(a) stable heart or stroke cases,

(b) non-critically injured persons, especially workmen, being cared for at all individual first aid facilities,

(c) patients being cared for in private or public nursing homes or hospitals.

Priority 4 - Urgent Call

This call refers to situations of a life-threatening nature (where time is crucial).

Examples:

(a) a serious accident or acute illness case,

(b) patients who are unattended or in a public place and whose injury or illness condition is not known.

INTER-INSTITUTIONAL PATIENT TRANSFER STUDY ADVISORY COMMITTEE

LIST OF MEMBERS

1. Dr. D. Psutka, Chairman
   Emergency Health Services
   Ministry of Health
2. Miss J. Wagstaff
   Ontario Hospital Association
3. Dr. F. Baillie
   Ontario Medical Association
4. Ms. J. King
   Registered Nurses Association of Ontario
5. Mr. W. Dillane
   Ontario Nursing Homes Association
6. Mr. J. Price
   Ontario Ambulance Operators Association
7. Mrs. M. Leonard
   Association of District Health Council Chairmen
8. Mr. J. Williams
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9. Mr. N. Lamont
   Association of Casualty Care Personnel
10. Mr. J. Marriott
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12. Mr. J. Anderson
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13. Mr. G. Ventura
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Study Data Co-ordinator
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TABLE 1

NUMBER OF PERSONAL INTERVIEWS
INTER-INSTITUTIONAL PATIENT TRANSFER STUDY

District Health Council Study Area	Regional Managers and Ambulance Services	Hospitals	District Health Councils	Total
Thames Valley	10	15	2	27
Manitoulin-Sudbury	3	23	1	27
Hamilton-Wentworth	2	4*	1	7*
Metropolitan Toronto	5	29	1	35
Ottawa-Carleton	6	26	1	33
Kingston, Frontenac & Lennox, and Addington	2	22	1	25
Total	28	119*	7	154

*An additional 10 telephone interviews were conducted.

APPENDIX B

TABLE 2

NUMBER AND PERCENTAGE OF INTER-INSTITUTIONAL PATIENT TRANSFERS
BY ONTARIO REGION
1979-1981

REGION	YEAR		
	1979	1980	1981
SOUTH WEST	24,752 16.7%	27,031 15.7%	30,066 16.7%
CENTRAL WEST	28,624 19.3	35,366 20.5	38,154 21.1
CENTRAL EAST	56,624 38.3	65,430 37.9	66,983 37.1
EAST	23,655 16.0	28,193 16.4	26,993 15.0
NORTH EAST	10,657 7.2	12,389 7.2	13,860 7.7
NORTH WEST	3,712 2.5	3,982 2.3	4,240 2.4
TOTAL	148,024 100%	172,391 100%	180,296 100%

* Ambulance Codes 1-4.

TABLE 3

PERCENTAGE INCREASES* AND DECREASES IN PATIENT TRANSFERS BETWEEN HEALTH FACILITIES 1979-1981 BY REGION AND STUDY AREA IN ONTARIO**

REGION AND STUDY AREA		STUDY AREA(S)	REMAINDER OF REGION	TOTAL
		%	%	%
SOUTH WEST				
Thames Valley	1979-80	12.3	7.5	9.2
	1980-81	9.8	12.1	11.2
	1979-81	23.3	20.5	21.5
CENTRAL WEST				
Hamilton-Wentworth		20.0	25.6	23.6
		11.3	6.0	7.9
		33.5	33.2	33.3
CENTRAL EAST				
Metro Toronto		14.5	18.1	15.6
		2.7	1.7	2.4
		17.5	20.2	18.3
EAST	K	O-C		
Kingston	32.5	9.3	25.0	19.2
Ottawa-Carleton	-1.9	-16.4	6.6	-7.8
	30.0	- 8.7	33.1	14.1
NORTH EAST				
Manitoulin-Sudbury		14.3	17.6	16.3
		15.6	9.3	11.9
		32.2	28.6	30.1
NORTH WEST				7.3
				6.5
				14.2
PROVINCE				16.5
				4.6
				21.8

* Percentages represent increases; exceptions are indicated.

** Data includes Ambulance Codes 1-4.

TABLE 4A

PERCENTAGE OF INTER-INSTITUTIONAL TRANSFERS
FOR AMBULANCE CODES 1-4
BY REGION AND DISTRICT HEALTH COUNCIL AREA
IN ONTARIO, 1981*

REGION	DISTRICT HEALTH COUNCIL AREA	1	2	3	4
SOUTH WEST		62%	21%	13%	4%
	Essex	58	31	6	4
	Kent	79	3	14	4
	Thames Valley	67	18	12	3
	Grey Bruce	62	18	16	4
	Lambton	61	18	17	4
	Huron/Perth	51	22	20	7
CENTRAL WEST		60	25	12	3
	Niagara	61	22	13	4
	Hamilton-Wentworth	66	24	9	1
	Brant	54	30	12	4
	Wellington/Dufferin	52	24	17	7
	Halton	58	20	19	3
	Haldimand/Norfolk	42	20	26	12
	Waterloo	57	32	8	3
CENTRAL EAST		69	11	17	3
	Haliburton, Kawartha, Pine R.	55	22	19	4
	Durham	71	7	15	7
	Peel	54	24	19	3
	Metro Toronto	71	9	18	2
	York	79	4	12	6
	Simcoe	61	15	15	8
	Muskoka	65	17	16	3
EAST		61	21	13	5
	Ottawa-Carleton	69	18	9	4
	Lanark, Leeds, Grenville	58	18	17	7
	Seaway Valley	60	25	11	4
	Hastings	54	19	20	8
	Kingston, Frontenac, Lennox & Addington	59	27	11	3
	Renfrew	37	16	33	14
	Prince Edward	49	24	20	7

*Study areas are underlined.

TABLE 4A

(CONTINUED)

REGION	DISTRICT HEALTH COUNCIL AREA	1	2	3	4
NORTH EAST		53	34	10	3
	Algoma	44	41	9	6
	Manitoulin-Sudbury	60	32	7	1
	Cochrane	43	24	19	3
	Timiskaming	41	33	19	7
	Nipissing	56	37	6	2
	Parry Sound	50	22	20	7
NORTH WEST		49	37	12	3
	Thunder Bay	53	35	9	3
	Kenora-Rainy River	18	49	29	3
ONTARIO		63	19	14	4

TABLE 4B

Non-Emergency Inter-Institutional Transfers
as a Percentage of All Inter-Institutional Transfers (IIT)
by Ontario Region and Study Area 1981*

Region	Total IIT	Percent Code 1 and 2 IIT	District Health Council Study Area	Total IIT	Percent Code 1 and 2 IIT
South West	30,066	82%	Thames Valley	10,914	85%
Central West	38,154	85	Hamilton-Wentworth	13,916	90
Central East	66,983	79	Metropolitan Toronto	46,525	80
Eastern	26,993	82	Ottawa-Carleton	9,569	90
			Kingston	4,790	87
North East	13,860	88	Manitoulin-Sudbury	5,847	94
North West	4,240	87			
Total	180,296	148,371		91,561	76,697
		(82%)			(84%)

* IIT were 31 percent of all ambulance calls in 1981; non-emergency (Code 1 and 2) IIT were 25 percent of all ambulance calls.

The six study areas account for 51 percent of all IIT; 52 percent of all Code 1 and 2 IIT.

A DISCUSSION

Transfers Between Types of Facilities

Non-emergency transfer patterns in Manitoulin-Sudbury differ from patterns in the five health sciences areas. Of the health sciences areas, Thames Valley, Hamilton-Wentworth and Kingston transfer patterns are similar and Metro Toronto and Ottawa-Carleton have similarities.

Eighty-five percent of the transfers in Manitoulin-Sudbury are between the three acute hospitals, i.e., Sudbury General, Memorial and Laurentian, and to nursing homes (10 percent) and smaller hospitals in the area. In Kingston and Hamilton-Wentworth, two-thirds of the transfers in the area are between teaching hospitals. In all three areas, pickups at teaching hospitals for destinations outside the area are principally to 200+ and 1-999 bed hospitals, about 80 percent, nursing homes (2 to 10 percent) and other teaching hospitals. In Kingston, 90 percent of the transfers are between Kingston General and Hotel Dieu; in Hamilton almost all of the transfers are between the five hospitals, i.e., Civic, Henderson, Chedoke and McMaster hospitals and St. Joseph's.

In Metro Toronto and Ottawa-Carleton, the routine transfers are more evenly distributed between types of health facilities, i.e., roughly one-third of the transfers are to and from teaching hospitals, one-third 200+ bed facilities, 20 percent to nursing homes and roughly 15 percent among smaller hospitals and other facilities. Both of these areas contain major teaching hospitals and a number of large and small community hospitals and other health facilities. Of the transfers from Metro Toronto and Ottawa to destinations outside these areas, 50 to 60 percent are from teaching hospitals to large hospitals, small hospitals and

and nursing homes. Transfers between the two large teaching hospitals in Ottawa (Civic and General) account for 45 percent of the transfers within Ottawa.

Frequent Routine Transfers

The most frequent routine transfers within each of the study areas were noted because of the potential for routing patient transfer vehicles between pickup and destination institutions. Frequent transfers were defined as pickups and destinations requested at least once a week. The accompanying Tables* show that the percentage of frequent Code 1 and 2 transfers in the six study areas amount to from 28.9 percent (in Thames Valley) to 59.7 percent (in Manitoulin-Sudbury) of the routine transfers. For all of the study areas, 40 percent of the routine transfers are from once to 28 times a week.

In the Thames Valley area, 8 ambulance services handle 99 percent of the routine inter-institutional transfers. The Thames Valley Ambulance transfers 62 percent of the requests. Sixty-eight percent of the most frequent routine transfer pickups are from the three London teaching hospitals; 77 percent of the frequent routine transfer destinations are these hospitals. Approximately one-third of the most frequent non-emergency transfers are to and from hospitals that are from 30 to 50 kilometres from London.

*Frequent transfers in each of the study areas are described in a Table.

In Hamilton-Wentworth, 97 percent of the routine transfers are handled by two ambulances, i.e. Fleetwood Ambulance (49%) and Superior Ambulances (48%). In Hamilton, all of the frequent transfers are between the five teaching hospitals and amount to 90 routine transfers per week.

Approximately 90 percent of the frequent pickups and destinations in Manitoulin-Sudbury are between Sudbury General, Memorial and Laurentian. In this area, 99 percent of the transfers are handled from the ambulance service out of Sudbury General Hospital.

For this analysis, Metro Toronto was divided into East, West and Central areas. Princess Margaret was the most frequent destination for transfers from East and West areas, and within the Central area with an average of 10-12 ambulances per day and 5 call requests per day. Toronto General was next with 9 destinations and 7 call requests. Wellesley and Women's College place five requests and are destinations for five ambulances per day. Within the Eastern area, trips from Sunnybrook to Princess Margaret, Toronto East General to Toronto General and Scarborough Centenary to St. Michael's are most frequent, i.e., one to two trips a day, average. In the West area, the most frequent trips are between Etobicoke General and Toronto General (2 a day), St. Joseph's to Wellesley and St. Michael's (about 1 a day each), and between Branson Hospital and Humber Memorial (2 a day, average).

Several hospitals in (Kingston and Ottawa-Carleton) account for the largest percentage of frequent transfers. Hotel Dieu and Kingston General exchange 98 to 87 percent of the pickups and destinations. Almost all (99%) of the ambulances for trips in the Kingston DHC are dispatched from Hotel Dieu. In Ottawa, Hospital Montfort, Ottawa General, Queensway-Carleton and Ottawa Civic are the pickups and destinations for three-quarters (76%) of the frequent trips. All told, 8 hospitals in Ottawa account for approximately one-third of the routine transfers in the Ottawa-Carleton area.

Transfer patterns were studied with respect to the specialization of health facilities in an area and from the perspectives of facilities sending and receiving transfer patients, in addition to type of facility.

Specialization of Health Facilities

As discussed earlier, Manitoulin-Sudbury differed from the other areas as to transfer patterns by type of facility in that the three hospitals are non-teaching facilities and share transfers about equally. This area, and Hamilton-Wentworth, appear to represent an extreme in this study with respect to the effect of rationalization on transfers. Across the Province, generally, the total number of inter-institutional transfers is equal to two percent of the area population. Manitoulin-Sudbury and Hamilton-Wentworth with three percent are two of three exceptions. The other is

Kenora-Rainy River with one percent. Extent of hospital specialization can also be determined by the number of most frequent transfers as a proportion of all non-emergency transfers. By this measure, Hamilton and Sudbury join Kingston, with the largest proportion of frequent transfers.

The three hospitals in Sudbury are specialized such that it is almost inevitable that a patient admitted to one hospital will require at least one transfer to another facility for diagnostic work and/or treatment. Sudbury General has a 24-hour emergency room, neurology, obstetrics, ophthalmalogy, otolaryngology, and psychiatry. Memorial has cardiology, respirology, burn treatment and critical care. Laurentian has audiology, urology, renal dialysis, pediatrics, orthodpedics, chronic care and cancer treatment. Roughly 55 percent of the non-emergency transfers in the Manitoulin-Sudbury District Health Council area are between the three hospitals which are 5-10 minutes away by car. The result is that multiple patient transfers make the coordination of care difficult for the hospitals and physicians.

Hospital specialization in Hamilton is McMaster University, pediatrics, neo-natal; Chedoke, rehab and chronic care; Henderson, cancer treatment; General, trauma, burns, cardiology and neurology, and St. Joseph's respirology and

nephrology. A respondent at McMaster in emergency medicine reported an 11 percent increase in IIT in 1979-1980. The general concern on the part of this person and ambulance service personnel is that area rationalization of facilities and the resulting increase in routine transfers has "stretched" ambulance services until they are less able to respond to emergency calls.

At least one respondent in the London area mentioned that ambulances are tied up transporting non-emergency patients due to specialization of health facilities, e.g., Parkwood has rehab, nuclear medicine; University, St. Joseph's, and Victoria, Catscan. Hospitals outside of London also have specialized equipment, e.g., Tillsonburg and St. Thomas, ultra sound. The fact that routine transfers are spread throughout the area creates vehicle shortages and diminished first response capability in emergencies.

Most Frequent Inter-Institutional Transfers 1981
by District Health Council Study Area

District Health Council Study Areas and Population	Total Code 1 and 2 Transfers	Number of Frequent Transfers	Percent
Thames Valley 473,811	9,267	2,674	28.9%
Hamilton-Wentworth 411,445	12,482	4,691	37.6%
Manitoulin-Sudbury 197,848	5,334	3,187	59.7%
Metro Toronto 2,137,395	37,226	16,014	43.0%
Kingston 141,173	4,119	1,569	38.1%
Ottawa-Carleton 546,849	8,266	3,040	36.8%
TOTAL	76,694	31,175	40.6%

FREQUENT TRANSFERS

THAMES VALLEY *

Destination / Pick-up	University	St. Joseph's	Victoria	Tillsonburg Dist. Mem.	St Thomas Elgin General	Newbury Four Counties General	Strathroy Middlesex General	Ingersoll Alexandra Hospital	Woodstock General	Total
University	1	149 (3)	194 (4)	27	43 (1)	3	11	13	71 (1)	512 (10)
St. Joseph's	174 (3)	6	287 (6)	41 (1)	4	13	64 (1)	7	8	604 (12)
Victoria	184 (4)	258 (5)	2	71 (1)	49 (1)	57 (1)	17	32	36	706 (14)
Tillsonburg Dist Memorial	33	58 (1)	82 (1-2)	-	2	-	-	-	2	177 (3)
St. Thomas Elgin General	69 (1)	6	80 (1-2)	1	1	2	-	-	-	159 (3)
Newbury Four Counties General	6	3	60 (1)	-	-	1	1	-	-	71 (1-2)
Strathroy Middlesex General	38	91 (2)	26	-	-	4	2	-	-	161 (3)
Ingersoll Alexandra Hospital	7	7	38	5	-	-	-	-	18	75 (1-2)
Woodstock General	107 (2)	12	75 (1-2)	2	1	-	-	12	-	209 (4)
Total	619 (12)	590 (11)	844 (16)	147 (3)	100 (2)	80 (1-2)	95 (1-2)	64 (1)	135 (2-3)	2,674 (51)

* ( ) = total number of trips per week

FREQUENT TRANSFERS

HAMILTON *

Pick-up \ Destination	Hamilton Civic	Chedoke General	Chedoke McMaster	St. Joseph	Hamilton Civic Henderson	Total
Hamilton Civic General	7	114 (2)	323 (6)	423 (8)	600 (12)	1,467 (28)
Chedoke General	79 (1-2)	154 (3)	321 (6)	51 (1)	36	641 (12)
Chedoke McMaster	272 (5)	297 (6)	4	193 (4)	145 (3)	911 (18)
St. Joseph's	365 (7)	81 (1-2)	269 (5)	9	89 (2)	813 (16)
Hamilton Civic Henderson	590 (11)	39	141 (3)	86 (2)	3	859 (17)
Total	1,313 (25)	685 (13)	1,058 (20)	762 (15)	873 (17)	4,691 (90)

* (x) = estimated number of trips per week.

FREQUENT TRANSFERS

SUDBURY *

Destination / Pick-up	Sudbury Memorial	Laurentian	Sudbury General	Espanola General	Manitoulin Health Centre	Mindemoya Red Cross Hospital	Total
Sudbury Memorial	-	379 (7)	2	2	13	-	396 (8)
Laurentian	121 (2)	4	416 (8)	13	13	1	568 (11)
Sudbury General	870 (17)	1,011 (19)	5	13	59 (1)	2	1,960 (38)
Espanola General	24	20	40	-	34	-	118 (2)
Manitoulin Health Centre	21	19	65 (1)	33	-	1	139 (3)
Mindemoya Red Cross Hosp	-	-	1	3	2	-	6
Total	1,036 (20)	1,433 (28)	529 (10)	64 (1)	121 (2)	4	3,187 (61)

* (x) = estimated number of trips per week

FREQUENT TRANSFERS

KINGSTON *

Destination / Pick-up	Hotel Dieu	Kingston General	Napanee Lennox & Addington County	Total
Hotel Dieu	1	647 (12)	13	661 (13)
Kingston General	630 (12)	2	94 (1-2)	726 (14)
Napanee Lennox & Addington County	31	149 (3)	2	182 (3-4)
Total	662 (13)	798 (15)	109 (2)	1,569 (30)

* (x) = estimated number of trips per week

Note: 98% of pickups at Hotel Dieu go to Kingston General
87% of pickups at Kingston General go to Hotel Dieu

FREQUENT TRANSFERS

OTTAWA *

Destination / Pick-up	Hosp. Montfort	National Defence Medical Centre	Childrens Hosp. of East. Ont	Ottawa General	Riverside	Queensway Carleton	Ottawa Civic	Salvation Army Grace	Total
Hosp. Montfort	3	5	23	258 (5)	8	2	28	1	328 (6)
Nat'l Defence Medical Centre	-	-	36	19	-	-	109 (2)	-	164 (3)
Childrens Hosp of E. Ont.	9	37	1	68 (1)	21	8	35	13	192 (3-4)
Ottawa General	252 (5)	56 (1)	84 (1-2)	-	93 (1-2)	202 (4)	55 (1)	19	761 (15)
Riverside	4	5	32	104 (2)	3	4	95 (1-2)	2	249 (5)
Queensway Carleton	5	5	58 (1)	208 (4)	1	2	246 (5)	12	537 (10)
Ottawa Civic	28	162 (3)	90 (1-2)	72 (1-2)	73 (1-2)	207 (4)	3	56 (1)	691 (13)
Salvation Army Grace	1	-	34	16	1	7	59 (1)	-	118 (2)
Total	302 (6)	270 (5)	358 (7)	745 (14)	200 (4)	432 (8)	630 (12)	103 (2)	3,040 (58)

* (x) = estimated number of trips per week.

The Well-Being of Patients and Waiting Time

In the London area, patients could wait 12 hours for return to an out-of-town hospital. Once or twice a month, a patient waits three days for a transfer to a nursing home. Hamilton area hospitals indicated that patients regularly experience a 1.5 to two hour wait for a return trip. In Metro Toronto, hospital spokesmen stated that 70 percent of their patients experience delays in return trips of three to four hours. A five month study of patients in the holding area at Princess Margaret shows that the average waiting time for an ambulance is 81 minutes. Long waits in the Manitoulin-Sudbury area of four to nine hours are experienced by patients from Little Current and Mindemoya. Delays of one hour were mentioned as being frequent in the Kingston area but the most serious concerns were expressed in Ottawa. Ten hospitals mentioned return trip delays of from two to three hours to eight hours. A common estimate was that 70 percent of the routine transfers wait two to three hours for transport.

TABLE 5

INTER-INSTITUTIONAL PATIENT TRANSFERS IN 1981*
BY AMBULANCE CODE AND ESCORT

ESCORT/ ACCOMPANIMENT	AMBULANCE CODE 1	2	3	4	TOTAL
DOCTOR AT SCENE	(1,359) 9.2%	(449) 6.4%	(1,697) 19.0%	(626) 16.6%	(4,131) 12.0%
DOCTOR IN AMBULANCE	(606) 4.1	(382) 5.4	(1,155) 12.9	(639) 17.0	(2,782) 8.1
NURSE WITH PATIENT	(11,578) 78.2	(5,712) 81.3	(5,144) 57.7	(2,111) 56.1	(24,545) 71.0
POLICEMAN FIREMAN, CITIZEN, OTHER	(1,263) 8.5	(482) 6.9	(925) 10.4	(385) 10.2	(3,055) 8.9
TOTAL	(14,806) 100%	(7,025) 100%	(8,921) 100%	(3,761) 100%	(34,513) 100%
PERCENT ACCOMPANIED	13.1%	20.0%	35.4%	55.9%	19.1%
PERCENT OF INTER-INSTITUTIONAL TRANSFERS	62.8%	19.5%	14.0%	3.7%	100%

*OASIS data.

TABLE 6

PERCENT NURSE ESCORTS FOR NON-EMERGENCY*
TRANSFERS BETWEEN HEALTH FACILITIES, 1981

REGION	DISTRICT HEALTH COUNCIL AREA	NUMBER OF CODE 1 & 2 TRANSFERS	PERCENT ESCORTED BY NURSE
SOUTH WEST		24,999	8%
	Essex	6,568	13
	Kent	1,121	5
	Thames Valley	9,267	7
	Grey Bruce	3,692	3
	Lambton	1,779	6
	Huron/Perth	2,572	9
CENTRAL WEST		32,376	10
	Niagara	5,959	3
	Hamilton-Wentworth	12,482	15
	Brant	1,948	15
	Wellington/Dufferin	2,832	6
	Halton	2,247	15
	Haldimand/Norfolk	844	7
	Waterloo	6,064	7
CENTRAL EAST		53,281	11
	Haliburton, Kawartha, Pine Ridge	3,650	11
	Durham	4,077	7
	Peel	2,292	20
	Metro	37,226	12
	York	2,730	6
	Simcoe	2,564	13
	Muskoka	742	7

* Non-emergency transfers are Ambulance Codes 1 and 2. Nurse escorts include RN; RNA; and ward aides. Study areas are underlined.

TABLE 6 (Cont'd)

REGION	DISTRICT HEALTH COUNCIL AREA	NUMBER OF CODE 1 & 2 TRANSFERS	PERCENT ESCORTED BY NURSE
EASTERN		22,009	6%
	Ottawa-Carleton	8,266	11
	Lanark, Leeds, Grenville	2,395	4
	Seaway Valley	4,351	4
	Hastings	1,743	4
	Kingston, Frontenac and Lennox and Addington	4,119	5
	Prince Edward	465	1
	Renfrew	670	2
NORTH-EASTERN		12,077	5
	Algoma	1,973	3
	Manitoulin-Sudbury	5,337	6
	Cochrane	1,048	7
	Timiskaming	808	9
	Nipissing	2,571	3
	Parry Sound	340	2
NORTH-WESTERN		3,629	7
	Thunder Bay	3,276	8
	Kenora-Rainy River	353	2
ONTARIO		148,371	9%

TABLE 7

ESTIMATED PERCENTAGE OF NON-EMERGENCY PATIENTS TRANSFERRED BETWEEN HEALTH FACILITIES FOR ADMISSION AND RETURNING PATIENTS, 1981*

REGION	DISTRICT HEALTH COUNCIL AREAS	PERCENT PATIENTS ADMITTED	PERCENT PATIENTS RETURNING
SOUTH WEST		34%	41%
	Essex	22	46
	Kent	52	26
	Thames Valley	30	49
	Grey Bruce	43	36
	Lambton	40	28
	Huron/Perth	49	21
CENTRAL WEST		30%	50%
	Niagara	31	40
	Hamilton-Wentworth	32	54
	Brant	37	40
	Wellington/Dufferin	38	40
	Halton	42	29
	Haldimand/Norfolk	32	45
	Waterloo	17	69
CENTRAL EAST		31%	41%
	Haliburton, Kawartha and Pine Ridge	36	43
	Durham	26	49
	Peel	26	33
	Metro Toronto	32	42
	York	21	26
	Simcoe	41	36
	Muskoka	35	44

*OASIS data.

TABLE 7 (Cont'd)

REGION	DISTRICT HEALTH COUNCIL AREAS	PATIENTS ADMITTED	PATIENTS RETURNING
EAST		36%	37%
	Ottawa-Carleton	35	34
	Lanark, Leeds and Grenville	37	37
	Seaway Valley	48	22
	Hastings	45	22
	Kingston, Frontenac and Lennox and Addington	21	64
	Renfrew	56	21
	Prince Edward	31	40
NORTH EAST		23%	55%
	Algoma	15	52
	Manitoulin-Sudbury	19	69
	Cochrane	37	32
	Timiskaming	27	20
	Nippissing	28	67
	Parry Sound	45	19
NORTH WEST		31%	45%
	Thunder Bay	30	48
	Kenora-Rainy River	40	28
ONTARIO		32%	44%

TABLE 8

THE RELATIONSHIP BETWEEN
PERCENTAGES OF RETURNING PATIENTS, ESCORTS
AND TRANSFER DISTANCES*

A.

ESCORTS	RETURNING PATIENTS: LOW PERCENT	RETURNING PATIENTS: HIGH PERCENT	
Low Percent	(14) 58%	(3) 27%	(17) 49%
High Percent	(10) 42%	(8) 73%	(18) 51%
	(24)	(11)	(35) 100%

B.

ESCORTS	MAJORITY OF SHORT DISTANCE TRANSFERS RETURNING PATIENTS: LOW PERCENT	MAJORITY OF SHORT DISTANCE TRANSFERS RETURNING PATIENTS: HIGH PERCENT		LONG DISTANCE TRANSFERS RETURNING PATIENTS: LOW PERCENT	LONG DISTANCE TRANSFERS RETURNING PATIENTS: HIGH PERCENT	
Low Percent	(3) 37%	(1) 11%	(4) 23%	(11) 69%	(2) 100%	(13) 72%
High Percent	(5) 63%	(8) 89%	(13) 77%	(5) 31%	0	(5) 28%
	(8)	(9)	100% (17)	(16)	(2)	100% (18)

*OASIS data, 1981.

Data Analysis for TABLE 8.

For this analysis, the Province was divided into 35 county areas. OASIS data for 1981 was used to classify each area with respect to transfer distances, percent of patients requiring a return transfer, and percent of patient accompaniment or escorts.

Transfer distances were categorized as short, the majority of transfer less than 10 kilometers, or long, transfers of 10 kilometers or over comprising more than 50 percent of the total number of transfers. Areas with more than 44 percent of the transferring patients requiring a return trip were classified as high returning patient areas; the rest were considered low on this variable. Areas with more than 50 percent escorted Code 1 and 2 patients were considered high escort areas, the rest were classified as low on this dimension.

Table 8A shows that areas with a high percentage of returning patients are also areas with a high percentage of escorts. The anamolies are the areas with a low percentage of returning patients and a high percentage of escorts. Distance clarifies this relationship (Table 8B). Low escort areas tend to send patients longer distances; areas in which patients are transferred short distances are more likely to be high escort areas, whether or not they have a high percentage of returning patients.

Legal Responsibilities of Hospitals

Of the 154 people who were interviewed in the six study areas, 10 mentioned the legal responsibility for patients as a transfer issue. Five respondents in Ottawa hospitals mentioned the responsibility for patients in transit and in receiving hospitals and the responsibility for assessing patients for travel. Respondents at Kingston General Hospital mentioned the liability of nurses as a result of a talk by an Ontario Hospital Association lawyer at a district meeting.

At St. Joseph's Hospital in Hamilton the practice is to send an escort because of the legal liability of the hospital. Respondents in Metro Toronto mentioned the liability of the sending hospital until the patient arrives at the receiving hospital where responsibility resides until the patient is returned to the sending facility.

TABLE 9

AVAILABLE ESTIMATES OF HOSPITAL COSTS
FOR ROUTINE PATIENT TRANSFERS

AREA AND HOSPITAL	TAXI COSTS	PATIENT ESCORT COSTS	RATIO OF TAXI TO AMBULANCE TRIPS (per year)
Thames Valley DHC			
Victoria Hospital (895 beds)			1:1 approx. 2,000:2,000
St. Joseph's Hospital (522 beds)			1:2 approx. 1,000:2,000
University Hospital (421 beds)			1:1.5 1,080:1,408
Hamilton-Wentworth			
St. Joseph's Hospital (577 beds)		1 F.T.E. (RN)	1:2 1,200:2,400
Hamilton General (991 beds)		.5 F.T.E. (RN)	
Sudbury-Manitoulin			
Laurentian Hospital (354 beds)	$6,150 1981/82; $7,000 1983. Each nursing unit charged taxi costs.	Cost absorbed by nursing unit.	1:1 approx. 600:600
Sudbury Memorial (201 beds)	$6,000-$8,000 per year	Cost absorbed by nursing unit, est. $6,000	
Sudbury General (310 beds)	$6,000 per year	Absorbed by nursing unit, est. $3,000	1:2 200:400

TABLE 9

AVAILABLE ESTIMATES OF HOSPITAL COSTS
FOR ROUTINE PATIENT TRANSFERS

AREA AND HOSPITAL	TAXI COSTS	PATIENT ESCORT COSTS	RATIO OF TAXI TO AMBULANCE TRIPS (per year)
Ottawa-Carleton			
Queensway Carleton Hospital (240 beds)	$3,708 1981/82	$9,200 1981/82	1:1
Montfort Hospital (252 beds)		(Jan.-June 1983) $ 7,260 363 RN hrs) 2,239 264 RNA hrs) 290 Orderly hrs) 2,166 11,665 or $23,000 a yr.	
Salvation Army Grace Hospital (202 beds)	10-15 taxi trips a month; $1500-1800 a yr.	One transfer in 10 is accompanied; 97 escorts in 1981 including RN, RNA, family volunteers = $6,000 est., per yr.	2:1
Kingston			
Lennox and Addington County General Hospital Napanee (66 beds)		Currently $300 per week or approx. $15,000. per year.	
Belleville General Hospital (432 beds)		Nov.1, 1982-July 30/83 583 Nursing hours, including 76 overtime hrs., for 170 trips = $12,420 or est.$16,000 a year, or an average of $300 a week.	

TABLE 9

AVAILABLE ESTIMATES OF HOSPITALS COSTS FOR ROUTINE PATIENT TRANSFERS

AREA AND HOSPITAL	TAXI COSTS	PATIENT ESCORT COSTS	RATIO OF TAXI TO AMBULANCE TRIPS (per year)
Metropolitan Toronto			
Doctor's Hospital (305 beds)			2:1
Scarborough Centenary (525 beds)		$500-600 a month	200:100
Mississauga General (491 beds)	Projected $17,226 per/year based on $5,742 April-July, 1983.	125 nursing hours per month at $12 per hour = $1500 per mo. or $18,000 per/yr.	3:1 600:200
		(2% of trips not accompanied) 3 RN to 4 RNA to 1 vol. RN cost 1 F.T.E. $27,938.29 RHA cost .7 $12,119.11 or est. $40,000 per year.	2.5:1

TABLE 10

NON-EMERGENCY TRANSFERS OF AMBULATORY PATIENTS BETWEEN HEALTH FACILITIES BY AMBULANCE CODE AND STUDY AREA, 1981

STUDY AREA	PERCENT CODE 1	PERCENT CODE 2	TOTAL NUMBER
Thames Valley	10%	16%	1046
Hamilton-Wentworth	6	5	716
Metro Toronto	8	9	3022
Kingston	12	21	610
Ottawa-Carleton	7	4	528
Manitoulin-Sudbury	9	11	517
TOTAL NUMBER	5,020	1,419	6,439
Ontario	8 (9,059)	11 (3,864)	(12,923)

APPENDIX C

DETAILS OF RECOMMENDATIONS

Planning

The District Health Council can provide a forum for the major teaching, community and chronic hospitals and nursing homes in each area, and the regional managers and operators of the area ambulance services to:

> establish the transport needs of transfer patients and undertake planning with respect to changes in hospital and transport arrangements.

Suggested Planning Guidelines for District Health Council Committees follow in this Appendix.

Implementation

An Implementation Group will be responsible for assisting key emergency health, transport and institutional representatives in demonstration project areas as changes in hospital and transport arrangements are made and monitoring the demonstrations.

Membership

The Implementation Group should include representatives of Emergency Health Services and Institutional Operations, Emergency Health and Institutional Planning and Policy in the

Ministry of Health in addition to the key emergency health, transport and institutional representatives in each demonstration area.

Improvements in Transport and Hospital Arrangements

The Emergency Health Services Division (EHS) of the Ministry has the mandate to manage the current emergency transport service. Therefore, improvements in patient transport system should continue to be the responsibility of Emergency Health Services.

In all areas of the Province, transport and hospital arrangements can be changed to make non-emergency transfers more efficient, economical and comfortable for patients through:

1) Coordination of transfer bookings and appointments within health facilities, and scheduling transport arrangements.

   Table 11 shows that areas of the Province that do not include health sciences centers tend to have the largest percentages of scheduled transfers because they send patients longer distances for diagnosis, treatment and admission. It also shows that if all transfers of patients requiring return trips were scheduled, there would be an increase of from 2 to 73 percent in scheduled transfers across the Province. The result would be an increase

in the ability to schedule vehicle utilization, to predict the time of arrival and departure, and the potential for substantially decreasing patient waiting time.

2) Communication between health facilities and ambulance services regarding procedures for booking and scheduling appointments.

3) A review of qualifications of ambulance attendants, patient needs in order to establish requirements for patient escorts on the part of sending and receiving facilities.

4) A review of patient assessment procedures at sending facilities, procedures for booking clinic appointments at receiving hospitals, length of appointments, procedures for scheduling return trips, possibilities for patient transport holding areas and requirements of patients awaiting return trips at receiving hospitals.

5) Review of possibilities for decreasing time spent by ambulance attendants on bed-to-bed transfers.

INTER-INSTITUTIONAL PATIENT TRANSFERS

Suggested Planning Guidelines for District Health Council Committees

1. Determine the total number of ambulance call requests* from the District Health Council area and
   a) the number of Priority 1 and 2 calls;
   b) the number of Priority 1 and 2 call requests for patient transfers between health facilities, i.e., hospitals, nursing homes.

2. Determine the frequency with which health facilities send and receive patient transfers, and the location of these health facilities.

3. Determine the peak times of the patient transfers:
   a) do the peak times, hours or days of the week correspond to hospital clinic times,
   b) are most transfers scheduled or unscheduled,
   c) are admission trips scheduled or unscheduled,
   d) what types of transfers can be arranged between scheduled trips.

*Data for planning can be obtained through data liaison officers identified for this service by The District Health Council Program and The Information Services Division, Ministry of Health.

4. Are the most frequent sending and receiving facilities located to form a group or a number of groups?

   What are the distances between health facilities?

   How many health facilities are there in the groups?

   Do health facilities send and receive patients within one group or between groups?

   For example, teaching hospitals or 200+ bed hospitals, psychiatric and chronic hospitals are the most frequent receivers, i.e., 60-70 percent of the transfers. Hospitals with 1-199 beds and those without diagnostic equipment, nursing homes, homes for the aged, home care programs are frequent senders.

5. Determine whether patient transfer traffic warrants consideration of alternate transfer modes.

   YES

   For example, if transfers average 3 a day or 15-16 a week each between 3 or 4 of the hospitals in a cluster of 5 or 6, or if one hospital receives 3 patients a day from each of 4-6 hospitals, consideration should be given to discussing alternate transfer modes with Emergency Health Services Division representatives.

NO

Consideration can be given to convening a committee of representatives from sending and receiving health facilities, local ambulance services, Emergency Health Service management and/or Institutional Operations teams of consultants to discuss and implement changes that can be made in current transfer procedures to make transfers more efficient and comfortable for patients. For example,

1) coordination of transfer bookings and appointment scheduling within health facilities;
2) communication between health facilities and ambulance services regarding procedures for booking and scheduling appointments;
3) discussion of qualifications of ambulance attendants, patient needs, and requirements for patient escorts on the part of sending and receiving facilities;
4) discussion of patient needs, patient assessment at sending facilities, clinic appointments of receiving hospitals, length of appointments, procedures for

scheduling return trips, possibilities for a holding area and requirements of patients awaiting return trips from receiving hospitals;

5) review of possibilities for instituting a procedure in sending and receiving hospitals to decrease the amount of time ambulance attendants spend in bed-to-bed patient transfers, particularly during peak transfer periods;

6) investigation of possibilities for reserving a regular ambulance or obtaining a duo-stretcher vehicle for routine patient transfers, particularly during peak times.

TABLE 11

ESTIMATES OF THE POTENTIAL FOR SCHEDULING NON-EMERGENCY PATIENT TRANSFERS BETWEEN HEALTH FACILITIES*

REGION	SCHEDULED TRANSFERS (CODE 2) AND PERCENT OF POTENTIAL		POTENTIAL FOR SCHEDULES**	POTENTIAL IMPROVEMENT
		%		%
SOUTH WEST	6383	(58)	11,000	42
Thames Valley	2003	(49)	4,077	51
Remainder of Region	4380	(63)	6,922	37
CENTRAL WEST	9577	(67)	14,245	33
Hamilton-Wentworth	3310	(60)	5,492	40
Remainder of Region	6267	(72)	8,753	28
CENTRAL EAST	7241	(31)	23,444	69
Metro Toronto	4351	(27)	16,379	73
Remainder of Region	2890	(41)	7,064	59
EAST	5615	(58)	9,684	42
Kingston	1287	(71)	1,812	29
Ottawa-Carleton	1687	(46)	3,637	54
Remainder of Region	2641	(62)	4,243	38
NORTH EAST	4750	(89)	5,314	11
Manitoulin-Sudbury	1853	(79)	2,348	21
Remainder of Region	2897	(98)	2,966	2
NORTH WEST	1565	(98)	1,597	2
ONTARIO	35131	(54)	65,283	46

*Estimates based on 1981 OASIS Data.
**44 percent of Code 1 and 2 transfers.

Changes in Transfer Arrangements in The Six Study Areas

In several of the study areas, hospitals that tend to collaborate on other matters have shared concerns regarding transfer issues. District Health Councils, recently through their Emergency Health Services Committees, have convened meetings to share concerns and ideas. For example, the three hospitals in Sudbury have developed policies and receiving procedures for hospital staff, and compiled information on preparation required for tests and treatments. In Metro Toronto, Scarborough General and Scarborough Centenary, Toronto General and Toronto East General share a block-booking system for patient appointments.

In the London area, coordination of requests within hospitals and the scheduling of transfers are the most frequently mentioned problems. In Hamilton, the requirements of receiving hospitals that patients have escorts, and patient care arrangements during waits for return transport are the main issues. In Metro Toronto, the lack of uniformity in the escort requirements of receiving hospitals plus the lack of patient care arrangements are also the issues. Escort requirements and patient care arrangements are issues in Kingston and Ottawa as well. One of the sending hospitals in the three areas indicated that their own procedures for booking appointments were no small part of the problem.

Several hospitals in Metro Toronto (Toronto General, Princess Margaret and Mt. Sinai) have established holding areas to provide

some care and supervision for transfer patients. These holding areas have been developed together with arrangements with Metro ambulance services for the pre-booking of transfers and the use of the multi-person transport vehicle. Victoria Hospital in London, and the Civic and the General in Ottawa have had the experience that holding areas turn into patient care wards. Perhaps holding areas, booking procedures for appointments, and scheduling of transfers have to be established simultaneously so that the transport of patients in and out of holding areas is assured.

The Metro experience with the multi-patient vehicle also indicates that patient transfers require an ambulance-hospital partnership. The introduction of the multi-person vehicle created the situation that when hospital staff requested an ambulance for a patient, the dispatcher, unknown to the staff, coordinated calls from several hospitals and sent a multi-person unit. At the hospital, the news about the introduction of the multi-person unit had not reached everyone, and procedures for assessing patients for such transfers had not been established within the hospital nor with the dispatcher and other ambulance personnel.

The partnership between ambulance services and hospitals is developing, however. Respondents in all areas expressed the need for collaboration. Generally, respondents felt that the Emergency Health Services Committees of District Health Councils

will become the structure through which problems and issues can be handled. Previously, a forum has been lacking. In the London area, ambulance services and hospitals have gotten together on specific issues, such as the transfer of equipment, scheduling of patient discharges and scheduling of appointments. A regional committee has been established in Hamilton to study issues and a number of reports have been produced on the transfer situation there. Manitoulin-Sudbury has an Emergency Health Services Co-ordinating Committee. The District Health Council in Ottawa has convened a Committee on Emergency Health Services, and in Metro the Council has issued a comprehensive report on emergency services. In Kingston, a partnership exists between ambulance services and hospitals with the arrangement that the ambulance service is housed at Hotel Dieu and staff are dual-appointed.

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